

APPARATUS AND METHODS FOR INTERSYMBOL INTERFERENCE  
COMPENSATION IN SPREAD SPECTRUM COMMUNICATIONS

ABSTRACT OF THE DISCLOSURE

A communications signal representing symbols encoded according to respective portions of a spreading sequence is decoded. Time-offset correlations of the communications signal with the spreading sequence are generated. The time-offset correlations are combined to generate first estimates for the symbols.

- 5 Intersymbol interference factors that include a relationship among different portions of the spreading sequence are determined, and a second estimate for one of the symbols is generated from the first estimates based on the determined intersymbol interference factors. An intersymbol interference factor may include a relationship between a first portion of the spreading sequence associated with the one symbol to a  
10 second portion of the spreading sequence associated with another symbol and may be determined, for example, from the spreading sequence and a channel estimate for a channel over which the communications signal is communicated. The invention may be embodied as methods and apparatus, for example, as a receiver included in a communications apparatus, such as a wireless terminal, wireless base station, or other  
15 wireless, wireline or optical communications apparatus.